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The plan proposal is based on the plans developed in the pilot study for Bloemendal. A major difference is that we exclude the future railway in our proposal. According to the pilot study there are two different alternatives for the public transport to be arranged in Bloemendal. The first one would be a railway as a spine through the area and the second one would be based on trunk-buses along the main arterials. We have chosen to focus on the alternative based on trunk-buses because we consider it likely that the railway is not realised in a foreseeable future.

The project area comprises two parts, the first part is already existing areas; KwaNoxolo, Booyzen Park and Chatty. The second part is Bloemendal extension. The inventories took place in the existing area. Our detailed plans comprise parts in Booyzen Park and KwaNoxolo but the proposed concepts can be applied in the new extension as well.
Nodes; locations for services in Bloemendal

In the analysis we identified a number of places suitable for commerce and other services. The places can be developed into nodes of three levels; services, public transportation and clusters of various activities.

To make these services accessible to people living in Bloemendal we propose a local bus route. The bus route will go between the nodes and the residential parts of the area.

Nodes for services

Booysen Park Centre is proposed to be the main node in Bloemendal (1) it will serve the whole area with services like large supermarkets, clothes shops, restaurants and pubs. The development of the centre has already started which limits our possibilities to change the plans for it. We suggest that this centre will offer cultural activities like a theatre or a cinema. A community centre and a clinic already exist. This centre will function as the main transport node in the area. The trunk buses running between Port Elizabeth centre and Uitenhage will stop here. The node will function as a station where changes from one transportation to another takes place; for example from local bus to trunk bus.

We suggest a local centre (2) in the crossing between William Slamert Drive and Mpuko Street in KwaNoxolo. We see this as a natural place for further development as a supermarket has been built there and because William Slamert Drive will be an important spine through Bloemendal. This will be a local node for KwaNoxolo with services like a post office, a small supermarket and a community centre. In our analysis we have identified Mpuko Street and Lingelihle road as important places for informal trading. This node will be an alternative location for informal business that today takes place along the streets. We suggest that the square will be a place for the informal trading to be located.

Nodes for public transportation

The layout for the centre in KwaNoxolo can be seen as a principle for the two other local centres that we suggest in the new part of Chatty. But these will also include other facilities. The node located in the crossing of Standford Road (3) will include a bus stop for the trunk buses running between Port Elizabeth centre and Uitenhage.

The other node in the extension area for Bloemendal along William Slamert Drive (4) will be a station if the plans for the railway are implemented. It should be seen as an alternative to node (3) if the railway is built.

There will be one more travel node for the trunk buses along Standford Road (5) in connection with KwaNoxolo.

The two nodes along MR448 (6) will be bus stops for the trunk buses. These two nodes will become important when the business park and the communities around Bloemendal are developed.

Nodes for activities

In Booysen Park we suggest a new activity node (7). Today there are some sport facilities here and we suggest adding more activities to this area.

The activity node in KwaNoxolo (8) will be in connection with the existing sport centre that is of great importance for the area. We also think that it should be some kind of activity node in Bloemendal extension. We suggest it to be located somewhere along William Slamert Drive (9).
Densification

To increase the density in Bloemandal, in line with The Sustainable Community Project, we suggest adding high density housing on empty sites in the already built area and in the extension area of Bloemandal. The building structures in the infill areas will have to be adjusted so that they fit into the already built environment.

Principle of the density

The density will not be the same in the whole project area. We propose that the project area consists of different types of houses and density. The principle of the density is that it will decrease towards the outskirts of the project area. This is illustrated in the model below. The transition between high density and the lower density should be flowing and mixing different house types can soften the edges between the areas.

A description of the different levels of density

In the central parts around the nodes the density will be the highest in the area. The houses will be multi-family houses of two to three floors with space for commercial activities on the bottom floor. The houses will be placed close to the streets which will give character to the streets.

In the first level of high density housing will consist of multi-family houses and different attached houses. The houses will have space for commercial activities just like the houses within the node.

The second level of density will mainly consist of row houses and semi-detached houses but still relatively tight.

The third level of density will mainly consist of single-family houses in the outskirts of the area. The difference between these areas and the low density areas today will be that the house is placed in groups and not in rows.

In all the levels of density public places will be created. In most parts with the highest density there will not be a private site for every apartment, but there can be allotments where there will be possible to grow vegetables in the inner part of the block. In the parts with single-family houses there will be private gardens to the houses.
How to use the infill areas and the areas for new development

New housing in form of row-houses is proposed as infill on open spaces in the existing residential areas. A mix of different types of dwellings attracts different kinds of people which contribute to a sustainable development of the area. Housing with higher density will support services and public transport.

To attract families that are stronger economically, we suggest that parts of Bloemendal will be developed with house types of higher quality. The houses will be developed by a private company and not by Nelson Mandela Metropolitan Municipality. It is essential that better-off families settle down in Bloemendal to provide stronger base for service facilities. There are mainly three parts of Bloemendal that are suitable for this development, the first part is south of the proposed main centre in the area (1) and the second one is also in the south part of the area but further east (2). These two areas are limited by the hills south of the area. The third area is in KwaNoxolo; on the slope down towards Chatty River Valley (3). It is not built yet because it needs an additional sewer system. All these three parts are possible to develop but there are some difficulties that make it expensive.

There are four undeveloped school sites in KwaNoxolo and there is a need for new schools in the area but it is also need for densification. Our suggestion is that three of the sites are developed and built with schools and one is used for housing. We suggest that the undeveloped school site in the cross section of Mpuko Street and William Slamert Drive (4) will be developed with housing, necessary services and shopping facilities. To compensate the site we develop with housing; the two school sites that are right next to each other (5) can share school yard and sport facilities. The third school site is situated next to Chatty River Valley (6) and can use space in the valley for sport facilities. This makes it possible for the schools to be larger and therefore hold more pupils.

It is possible to develop the area on the edge of Chatty and Booysen Park (7) down towards the valley. We suggest the new development to be two floors to fit in with some of the existing houses next to this area.
PLAN PROPOSAL

Public space and safety

Two of the main objectives with our proposals are to improve public space and work with the physical structure to create a safe and secure environment.

Our proposals will present principles for how public spaces can be developed with some examples from the built existing environment. The principles can be applied in future development areas as well as existing environments.

Placement of houses to create rooms

Togetherness and a secure home environment are important to feel safe. To accomplish that by physical measures it is important to create a built environment that promotes these aspects.

The houses will be organised in smaller units to create opportunities for semi-public spaces and semi-private places between them. Placing houses in smaller groups will create a semi-private place in the middle of this group of houses. A few of these groups can then be a larger group that forms a semi-public space in between them. Streets and squares represent public space; private space is the own site and house.

The placement of the houses decides what kind of space there will be between them. The different house types can be placed in different ways. The multi-family house can have an angle to create a corner in the block structure. It is also possible to place the high-density houses in a way so they create a space between them. The places in between the houses can be used for playgrounds, small crop gardens, and common braai (South African barbeque) places; where the neighbours could come together for social activities. Between the smaller units, semi-public places are created where large groups of people can get together.

Today people living in the area are afraid to go out after sunset because of fear of crime. Smaller communities in the community can contribute to people feeling safer in and around their house because they can have an overview of what is going on outside. But also to know that one is seen when going outside, if something should happen.

If the windows of the houses are turned to the streets it affects the public street environment in a positive way, compared to facades with few or no windows. Houses that are built close to the street create a clear and definite public space. This together with our suggestion of trading at the bottom floor will promote a lively street environment many hours of the day. People appeal people and the use of the public street increases.

Different kinds of public places

Public space in a city can be of very different kind. The spaces can be more or less arranged like parks and playgrounds or it can be maintained nature. Public places can be both for recreational purposes and for more formal and business purposes like streets and squares.

Arranged public places in Bloemendal

We have earlier in the report identified a number of undeveloped open spaces. We suggest that theses places will be used for parks and cropping (growing vegetables) a family can grow vegetables for the household and then sell what is left. They can then use the household money to buy other things than food.

We suggest that a part of Chatty River Valley south of William Slamert Drive will be an arranged park. This can help connecting KwaNoxolo and Booysen Park. (This is further discussed in one of the individual parts.)

The railway reserve has to be saved for future development of the railway. But to prevent that informal house will appear in this area we suggest it to be arranged as a main illuminated path for pedestrians and cyclists in the area.
Public places with maintained nature in Bloemendal
The areas under the flood line are today not used of any other purposes than informal walkways between KwaNoxolo and Booysen Park. We suggest that these parts of Bloemendal will be green areas with maintained nature. But there will be arranged tracks in and through this area to make it easier to cross the valley or use it for recreation. We want to make these areas of specific use because it is common that empty areas are used for informal settlements even if they are under the flood line.

The storm water-channels in KwaNoxolo will be kept as they are today but in these areas we suggest arranged paths that are illuminated, we suggest that the greenery in them are maintained to save the recreational values. The green areas will function as green corridors through the area for flora and fauna.

Remake playground and park
This is a suggestion on how it is possible to use one of the many undeveloped public places in Bloemendal. We suggest integrating several functions in the place for it to be used by different people in different ages and in different times of the day.

We suggest that there will be trees for shadow, benches for resting, sandpits for the smaller children, and nearby we propose places for cropping. The place will be divided into sections much like a house with different rooms for different functions.

The playground for the smallest children is placed next to the houses to be away from the traffic. The football field has low bushes along the side so that the players will not run out in the street chasing a ball. The braai (barbeque) spot is placed in the middle for the people who braai to be able to watch the activities around.

This layout is applicable in other empty sites in the area as well. It is important that there are lots of opportunities for activities so that different groups and ages use the site many hours every day.
Traffic system in Bloemendal

The main road system, within the existing plans by Nelson Mandela Metropolitan Municipality, is of good quality but the plans can be further improved.

Design of main traffic system

We suggest that the four main arterials will function as the main entrances to Bloemendal, in line with the plans by Nelson Mandela Metropolitan Municipality. They will however create barriers for pedestrians and cyclists.

The analysis showed that there will be barriers in Bloemendal, especially for cyclists and pedestrians. Our design of the road net system will focus on breaking through barriers and create connections within Bloemendal.

One difference from the existing plans is that we suggest a ring road system to make a route in the area. This ring road will pass the main centre and the smaller nodes. Remaining roads will be of grid structure to make it easy to orientate oneself in the area. This will make the area easier to go around and there will not be unnecessary traffic in the local roads.

We suggest that on block level it will be tree structure net for the cars but with connections for the pedestrians through the blocks. William Slamert Drive will be an important spine through the area and along this road business will take place. Our proposed centre in KwaNoxolo will be one of the major nodes along this spine. Mpuko Street will be kept as the main road in KwaNoxolo and trading will be located along this street. Our proposals in the traffic system in the extension area of Bloemendal will have to be changed if the railway is realised. For example there have to be made plans for level separated cross sections.

Lights are important for the orientation in a city. Different types of lights can be used to create variation. Landmarks that are enlightened can also contribute to make the city easy orientated. Many smaller light sources can be used instead of a few big ones to create a more pleasant night environment.

Along the arterials we suggest separate pedestrian and cyclist roads to make it easy accessible and safe for people to travel along these routes. We suggest trees along the streets to limit the space for traffic. This visual effect can help to make the traffic slow down. It creates a more pleasant environment. The trees will also give shade for the people walking or cycling along the streets when the sun is burning. Trees help to decrease the traffic pollution. The cyclists and pedestrian walkways will be separated from the heavy traffic by a traffic island with trees. Trees will also separate the car traffic. There will be two lanes in each direction. The pedestrians and cyclist walkways will cross the arterials in level separated crossings.

We suggest that there will be separated sidewalks and separate cyclist roads along the main roads in the area. These will be designed in different ways depending on the amount of traffic using the road. There should be lights at every entrance combined with lights along the streets to light the way for both pedestrians and cyclists. A traffic island with trees will separate them from the heavy traffic.

We suggest that there will be sidewalks for the pedestrians but the cyclists and cars will share space on the local streets. Trees along the streets will give shade for them who walk or ride bikes. There will be lights at every entrance of all houses next to the street, this is to light up any dark corners that may appear. There will be light poles along the street as well.
Section of an arterial road

Section of a main road

Section of a local road
**Cyclists and pedestrians traffic system**

A well-lit network for the pedestrian and cyclist is important for people to feel safe during the dark hours. We suggest that the routes for pedestrians and cyclist will be more accessible and convenient than the ones for cars in general. In some parts where there are cul-de-sac streets, the pedestrian and cyclist roads will go right through the block but the cars have to stop and turn. The pedestrian and cyclist net will be improved by providing connections across vacant land and open spaces. Connections through Chatty River Valley will be improved. There will also be better opportunities to walk in the green areas and around Bloemendal.

Today few people use bicycles mainly because it is difficult to cross the valley by bicycle. If there is a good opportunity for bicycling we think it will be a popular way of transport within and outside the area. One goal is for example the University that is located along Standford Road a few kilometres from Bloemendal. An easy accessible cyclist net would promote cycling. Bicycling is a relatively cheap and fast way of travelling short distance and can be an alternative to public transport. A well functioning network of pedestrian and cyclist routes will contribute to a sustainable community. We suggest that there will be parking lots for the cyclist in the area to make it easy to take the bike to different places in and outside the area.

In the crossings with the arterials we suggest tunnels for pedestrians and cyclist. A convenient way of moving is important and the tunnels have to be placed in a way so people do not cross the street in fear of going through the tunnel. It is important that the tunnels are wide and illuminated so people feel safe passing through them.

The marked places on the map shows where we suggest that there will be secure crossing, not necessary tunnels, it can be red lights or measurements to make the cars go slow.